

NR Eligible: yes X
no

The tunnel has a fourteen-foot track center and a radius of 15 feet, six inches. The distance from the top of the rail to the keystone of the arch is approximately 24 feet, six inches (Thompson 1914: 913). The tunnel features poured concrete portals at the north and south openings. Tapered semicircular arches frame the tunnel openings and are flanked by massive tapered pilasters. Incised in the top of the arch is the word GRAHAM. Centered above the arches are keystones incised with the construction date of 1914. The

Date _____

200904223

portals are capped by a wide band of horizontal trim. The north portal is in good condition, while the south portal has experienced some spalling of the concrete facade.

The lining of the tunnel is concrete. A veneer of brick laid in common bond covers the concrete lining at the arch and the upper portions of the walls. The lower portions of the walls are concrete. Some areas of the original lining are covered with gunite, likely added as part of a repair effort.

Along the east and west walls of the tunnel are randomly spaced niches with flat and arched openings. There are a total of 22 niches in the east wall and 20 niches in the west wall. The largest niches, known as refuge niches, were constructed to provide cover for workers in the tunnel. The refuge niches measures approximately 18 to 24 inches in depth and five feet in height. In addition, shorter niches, likely intended for cables, switch boxes, or other equipment storage, are located at the base of the tunnel walls. Where the walls meet the gravel railroad bed there are shallow niches that carry conduit the length of the tunnel. In addition, a concrete drainage ditch is located between the railroad bed and west wall. Finally, at the northeast corner of the tunnel are metal anchors meant to hold cables and a few of the original porcelain insulators.

Historical Narrative:

Graham Tunnel was constructed between 1913 and 1914 by the B&O Railroad through an unnamed ridge to facilitate the laying of two tracks across a peninsula in the Paw Paw Bends of the Potomac River. The tunnel was erected as part of a campaign meant to expedite trains traveling along the Potomac River over the eastern end of the Cumberland Division of the B&O Railroad. The effort, known as the Magnolia Cutoff, involved the elimination of several bends around steep ridges, thereby shortening the route, as well as improvements in grade over the line.

The B&O Railroad was incorporated on April 24, 1827, after charter approval on February 28 of the same year, by a group of prominent Baltimore businessmen seeking to remain competitive with New York City and Philadelphia as trade and exploration extended westward from those port cities via canal and turnpike routes. Railroad transport was limited at that time; however, the risky venture was supported because Maryland's rugged geography made a canal impractical and turnpike travel was comparably expensive and labor-intensive. Surveyors planned a railroad route from Baltimore to the Ohio River, where passengers and cargo could transfer to steamboats. The first section of the line was laid out to Cumberland, Maryland, following the Patapsco River, crossing Parris Ridge, continuing through the Monocacy River Valley to the Potomac River near Harper's Ferry, and following the Potomac River to Cumberland. Grading and viaduct construction began in 1828 (completed during the winter), and the first track was laid the following year. The first 13 miles of track were completed from the station at Pratt Street in Baltimore to Ellicott Mills in May 1830, and the B&O Railroad soon after became the first American railroad to offer scheduled passenger service. The line was completed to Parris Ridge by mid-1831, to the Potomac River at Point of Rocks in April 1832, and to Harpers Ferry in December 1834 (Reynolds and Oroszi 2008:14-21).

The B&O Railroad experienced several setbacks in the late 1830s, including a dispute with the Chesapeake and Ohio (C&O) Canal over use of the north bank of the Potomac River. The case was settled in favor of the C&O Canal, requiring the B&O Railroad to construct an alternate route to Cumberland west of Harpers Ferry. The B&O Railroad constructed a bridge over the Potomac River at Harpers Ferry in January 1837, and began construction of the alternate route to Cumberland along the south bank of the river in 1839. The line finally reached Cumberland in November 1842 (Reynolds and Oroszi 2008:21-26; Salamon, Oroszi, and Ori 1993:87). Expansion westward from Cumberland to the Ohio River at Wheeling, Virginia (now West Virginia), began in 1850 and ended in December 1852 (Reynolds and Oroszi 2008:26; Harwood 1994:68).

Following construction of the B&O Railroad's Metropolitan Branch in the 1870s, the portion of the original line between

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MHT Comments:

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Date

Baltimore and Point of Rocks, MD became known as the "old line" and then the Old Main Line. The portion of the Old Main Line between Point of Rocks and Weverton, MD was improved and incorporated into the Metropolitan Branch, and the section west of Weverton to Cumberland, MD became known as the East End Subdivision of the Cumberland Division. The section west of Cumberland to Grafton, WV became known as the West End Subdivision of the Cumberland Division (Salamon, Oroszi, and Ori 1993:87; Reynolds and Oroszi 2008:42; Mellander 2000:4). The terrain through which the East End Subdivision passed presented engineering and financial challenges to the B&O Railroad, including the winding Potomoc River path laid astride steep mountainsides between Doe Gully and Paw Paw. The problem of maintaining traffic flow along the East End grew in the late nineteenth century as the route became an artery for ever-increasing freight traffic flowing east and west.

By 1900, the need for improved facilities east of Cumberland, Maryland, were apparent as the increase of bituminous coal shipped from the coal fields of Maryland, West Virginia, and Pennsylvania, coupled with the movement of passenger and fast freight, taxed the facilities along this section of the line. Within the East End Subdivision, the eastbound track between Orleans Road and Okonoko (Little Cacapon) was especially problematic as it included two single-track tunnels (Paw Paw and Doe Gully) and the steepest grade remaining between Martinsburg and Cumberland at Hansrote. However, improvement needs remained largely unmet due to the large expenditure required to upgrade track facilities along the Potomac River (Thompson 1914:863-868; Salamon, Oroszi, and Ori 1993:103).

The Potomac Railroad Company, a subsidiary of the B&O Railroad, was incorporated in West Virginia and Maryland in January 1903 for the purposes of constructing a 1.5-mile cutoff between Magnolia and the Paw Paw tunnel. Eventually, the B&O would build the Magnolia Cutoff in the same vicinity as this planned route (Jenkins 1922).

With increasing density and continued lack of facilities, the portion of the line between Patterson Creek and Cherry Run came to be known as the "Neck of the Bottle." Between the years 1910 and 1913 there was a 25% increase in the amount of tonnage traveling over the line, necessitating a change to eliminate congestion (Thompson 1914:871-872). Daniel Willard, B&O Railroad's president between 1910 and 1941, resolved to alleviate the situation by providing freight traffic with its own route, separate from passenger traffic. In 1911, the B&O Railroad purchased the peninsulas in the Paw Paw Bends, including one in Maryland, in order to shorten the route through the area (Mellander 2000:4; Reynolds and Oroszi 2008:58). The route was named the Magnolia Cutoff for one of the small towns that it passed through (Mash 1996:580).

On March 13, 1913, the improvement project was approved at a cost of \$6 million. The east end of the cutoff began at the station at Orleans Cross Roads in Morgan County and extended over sixteen miles to the west to Little Cacapon in Hampshire County. The route paralleled portions of the old right-of-way, with the two lines separated by only a few feet in several locations. Construction involved the drilling of four double-track tunnels (Graham, Randolph, Stuart, and Carothers), extensive earth removal at Doe Gully Tunnel to accommodate two additional tracks, and the construction of two bridges over the Potomac River on either side of Graham Tunnel. In addition, at a point near Paw Paw Ridge just west of Graham Tunnel, where there was not sufficient room for both lines, the new tracks were elevated above the old line and separated by a massive concrete wall, earning the routes the respective designations of High Line and Low Line. Although large portions of the cutoff were constructed adjacent to the existing line, remarkably the Low Line remained in operation during construction (Hollis and Roberts 1992:110; Salamon, Oroszi, and Ori 1993:103).

The work was carried out by seven different contractors under the direction of the B&O Railroad's Engineering Department headed by Chief Engineer F. L. Stuart. The construction of Graham Tunnel and the adjacent bridges was assigned to Bennett and Talbot Engineers of Greensburg, Pennsylvania. The extensive construction effort required 22 shovels; 57 locomotives; 550 dump cars; six concrete plants; 126 drills; and two power plants at the towns of Magnolia and Doe Gully. There were also sawmills and a blacksmith shop located at Magnolia. Working camps were added in the towns of Doe Gully, Hansrote, Magnolia, Kesslers, and

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Date

Paw Paw (Thompson 1914:929-932). Today, only the town of Paw Paw is thriving. Little remains from the other early-twentieth-century villages due to flooding.

Construction of the tunnels was begun by creating an opening about 16 feet wide at a height of nine feet using drills driven by compressed air and dynamite. The passageway was then dug out using a mechanical shovel. Timber cribbing supported the excavation until a permanent concrete lining was added. Refuse was removed from the site using dump cars. Once the tunneling was complete, a concrete tunnel lining measuring not less than two feet in depth was added. The concrete mixture was one part cement, three parts sand, and five parts stone. Broken stone was used as an aggregate, although initial plans also called for the use of gravel concrete. Since the B&O Railroad had learned that exhaust gases from steam locomotives caused rapid deterioration of concrete, vitrified shale bricks were used to line the top of the tunnel (Thompson 1914:908-920).

The four tunnels were named after B&O Railroad engineers. Graham Tunnel was named for J.M. Graham, who was appointed Chief Engineer in 1899 and held this position until February 2004, when he took a position with the Erie Railroad (B&O 1904). Randolph, Stuart, and Crothers tunnels were erected through ridges located in West Virginia; Graham Tunnel as well as the adjoining bridges were the only portions of the project contained within Maryland. Graham Tunnel was also unique in that it was the only tunnel constructed between two bridges. In addition, Graham Tunnel was the only one of the four tunnels to be driven through a solid rock core; the others were driven through loose rock (Hollis and Roberts 1992:122, 134). The construction of Graham Tunnel eliminated about two miles in travel distance (Thompson 1914:900).

In addition to being one of the largest improvement projects ever undertaken by the B&O Railroad, the Magnolia Cutoff was deemed by the engineering community and the company to be a significant feat both for its construction schedule and for cost. The cutoff was in use on December 5, 1914, less than 21 months after approval of the project and ahead of schedule (Thompson 1914:933). The cutoff was the last major improvement project of the B&O Railroad, as the railroad had overcome all of the significant natural obstacles along its lines by this time (Hollis and Roberts 1992:111).

The Magnolia Cutoff provided the B&O Railroad with four tracks through the area. The B&O Railroad moved eastbound freight traffic over the High Line and used the Low Line tracks for east and westbound passenger traffic and westbound freight traffic. Passenger traffic was routed over the Low Line in part to avoid any accidents in the tunnel areas with freight trains running on parallel tracks. In addition, heavy eastbound freights were routed over the cutoff to avoid the steeper grades along the Low Line (Thompson 1914:898). Thus, although it was assigned to the passage of growing levels of freight, the cutoff also facilitated passenger traffic movement along the East End of the Cumberland Division.

The Low Line continued in service until the early 1960s, at which time the associated track was removed (Hollis and Roberts 1992:133). The Western Maryland Railroad ceased carrying passenger trains in 1958, leaving only the Magnolia Cutoff operating through the area (Mash 1996:580; Salamon, Oroszi, and Ori 1993:103). In 1977, the peninsula on which Graham Tunnel is located, excluding the railroad right-of-way, was purchased by the State of Maryland for inclusion in the Green Ridge State Forest (Mash 1996:580). In 1986, the B&O Railroad line came under the ownership and authority of CSX Transportation, Inc., which continues operations on the rail line in 2009.

Significance Evaluation:

Graham Tunnel is eligible for listing in the National Register of Historic Places under Criterion A in the area of transportation. The tunnel is also eligible under Criterion C in the area of engineering.

Graham Tunnel is eligible under Criterion A for its association with transportation development trends of the early twentieth

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century and for its association with the Magnolia Cutoff of the B&O Railroad. The tunnel was part of a series of structures designed to eliminate bottlenecks and expedite service along the eastern end of the Cumberland Division. By constructing the cutoff, the B&O Railroad was able to direct eastbound freight traffic, including coal from the fields of West Virginia, Maryland, and Virginia, along this route, thereby alleviating congestion along the main line. In addition, the cutoff enabled increased levels of passenger traffic and resulted in the improvement of railroad services to small communities along the route, including Paw Paw and Magnolia.

The tunnel is not eligible under Criterion B as it is not associated with persons of historical importance.

Graham Tunnel is eligible under Criterion C in the area of engineering. The tunnel was part of the 12-mile-long Magnolia Cutoff, one of the largest engineering efforts of the B&O Railroad. The cutoff is an effective solution developed to overcome the restraints of difficult terrain presented by the river and surrounding mountains while maintaining operations along the existing tract. The successful execution of the design and cost effectiveness of construction was a testament to the planning and abilities of the engineers under whose direction it was constructed. Graham Tunnel is a key component in the Magnolia Cutoff design and a notable feat, being the only tunnel connected by bridges on either side. Although gunite repairs have been made to the interior of the tunnel and there has been some concrete loss at the south portal, the aesthetic quality and overall appearance of the 1914 tunnel has been maintained.

Archeological investigations have not been carried out at the site; therefore, the eligibility of the property under Criterion D has not been evaluated.

Integrity and Boundary:

The tunnel retains integrity of design, materials, and workmanship, as the concrete and brick lining and concrete portals remain. The tunnel retains integrity of location and association as it continues to carry the CSX Transportation, Inc., Railroad tracks through the mountainside. The tunnel also retains integrity of setting, connecting to the original truss bridges over the Potomac on either side. The boundary for the tunnel includes the footprint of the structure and all features associated with the tunnel during its period of significance (1914).

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MARYLAND HISTORICAL TRUST REVIEW

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Date

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Eligibility not recommended _____

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Date_____
Reviewer, National Register Program_____
Date

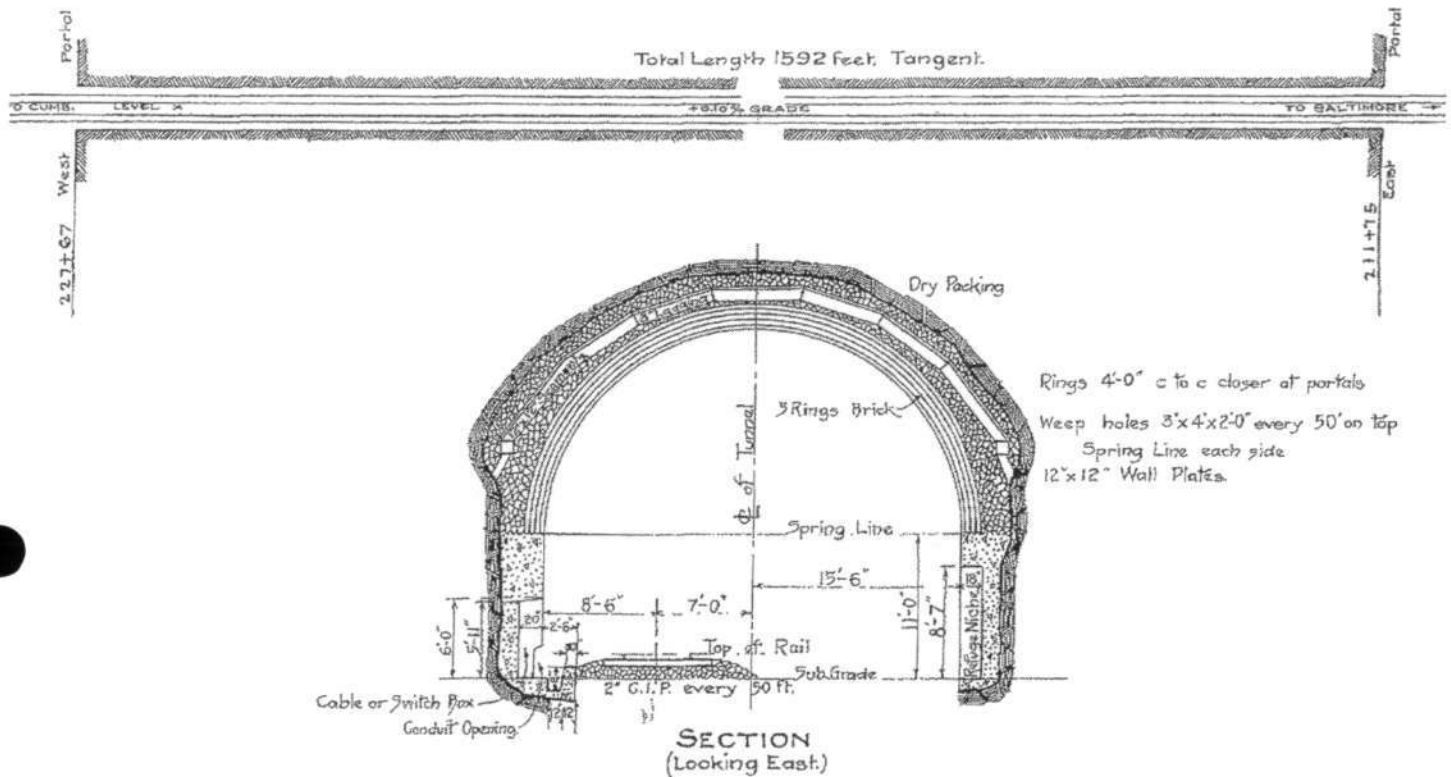
AL-1-C-062

Graham Tunnel, Allegany County, Maryland

Plan and section, looking east, October 1915.

(Source: Interstate Commerce Commission

Valuation (NARA Record Group 134, Stack 370).



B. & O. R. R.

PLAN, SECTIONS, &c.

GRAHAM TUNNEL

CUMBERLAND DIVISION

MAGNOLIA CUT-OFF

between Orleans Road and Okonoko

Scales: 1 in. = 100 ft. Sections 1 in. = 40 ft.

See Val. Map 40.4/3

Valuation (NARA Record Group 134, Stack 370).



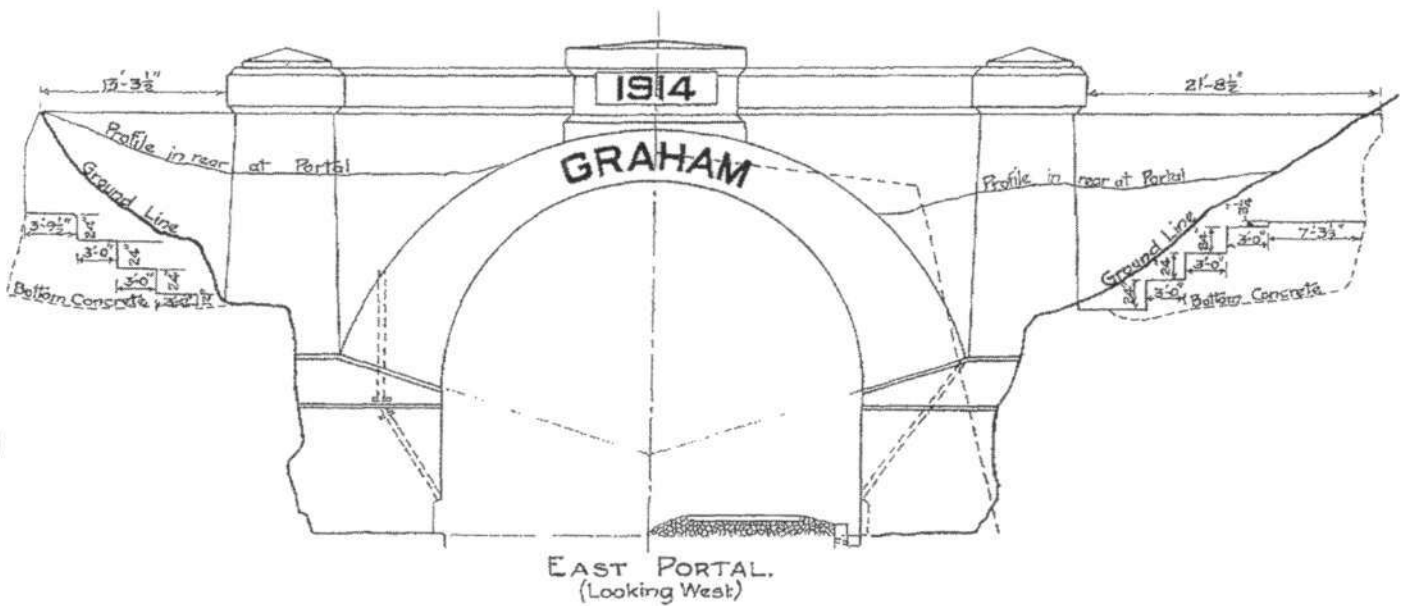
AL-I-C-062

Graham Tunnel, Allegany County, Maryland

East portal, looking west, October 1915.

(Source: Interstate Commerce Commission

Valuation (NARA Record Group 134, Stack 370).



Note :- All dimensions not shown are the same as the corresponding dimensions on West Portal.

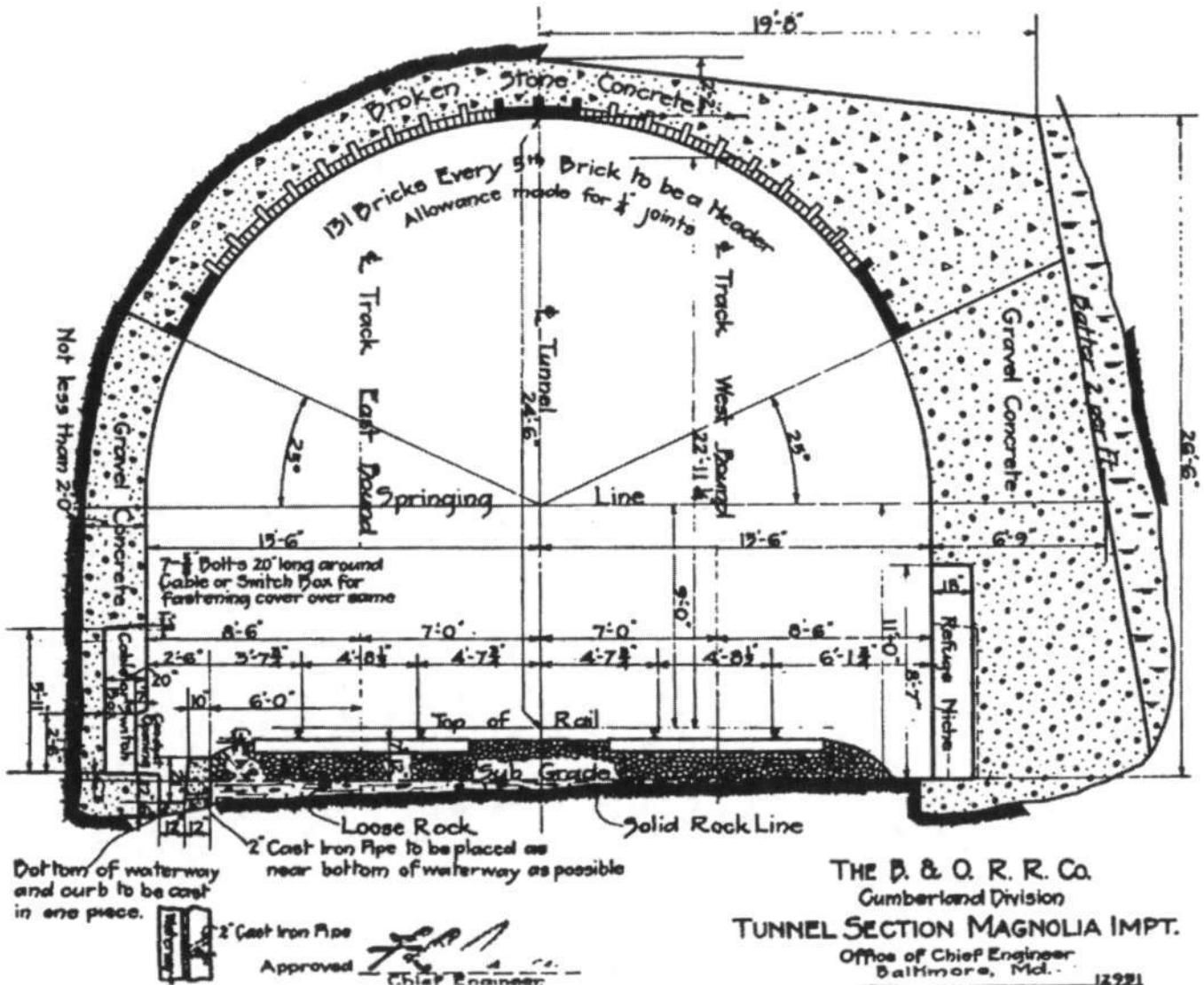
B. & O. R. R.
PLAN, SECTIONS, &c.
GRAHAM TUNNEL
CUMBERLAND DIVISION
MAGNOLIA CUT-OFF
between Orleans Road and Okonoko
Scale 1 in. = 100 ft. Sections 1 in. = 10 ft.

AL-I-C-062

Magnolia Cutoff, Allegany County, Maryland

Typical tunnel section from B&O construction plans, no date.

(Source: Thompson, 1914).

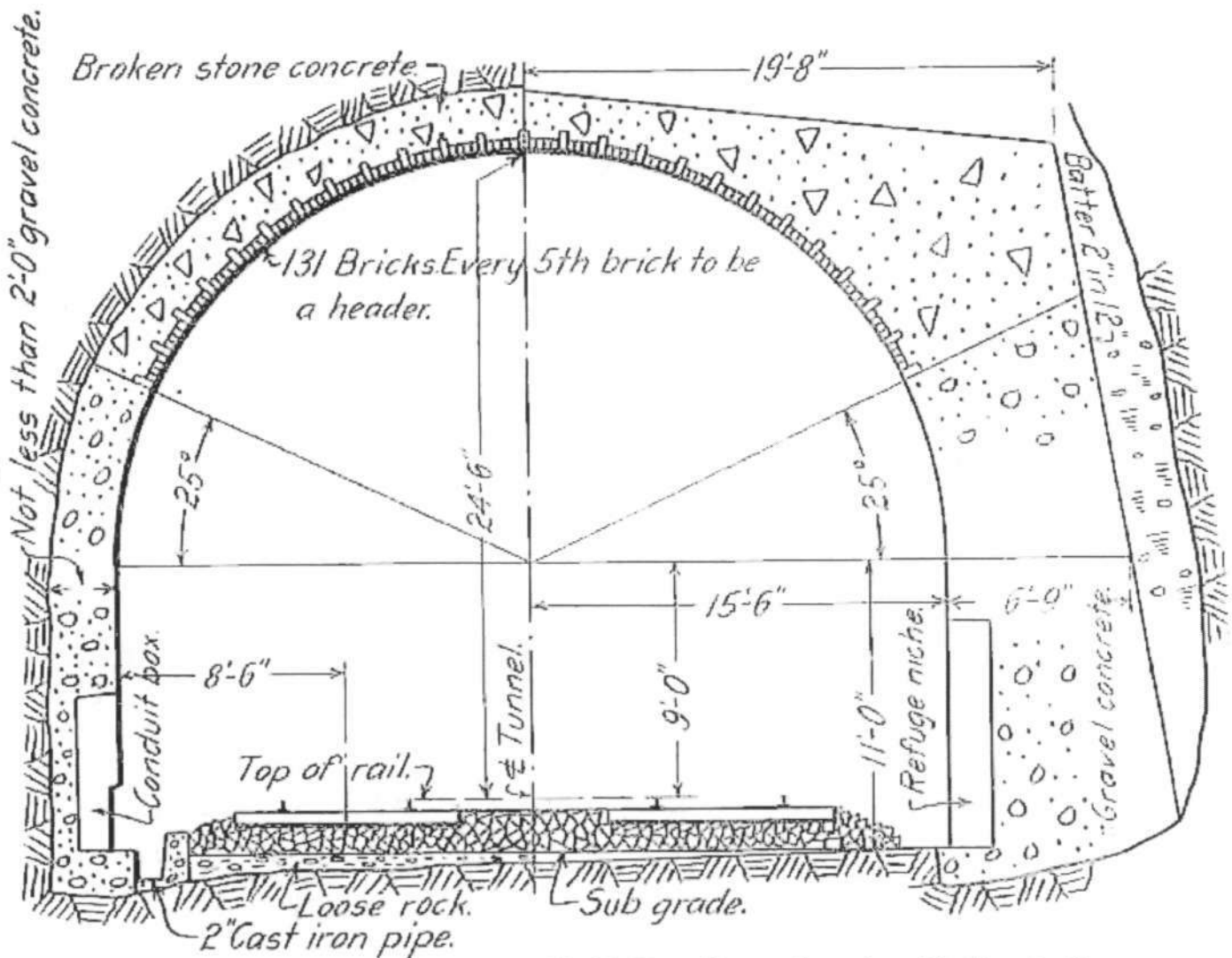


Magnolia Cutoff, Allegany County, Maryland

Typical tunnel half sections showing construction methods used under normal and adverse conditions.

Taken from B&O construction plans, no date.

(Source: Anonymous, "The Magnolia Cut-off of the Baltimore & Ohio Railroad", *Railway Age Gazette*, Volume 57, No. 3, July 17, 1914).



Half Section showing Normal conditions

Half Section showing Method of building in case of Slides, etc.

Section of Standard Double Track Tunnel with Concrete Lining

AL-I-C-062

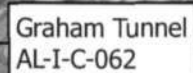
Graham Tunnel, Allegany County, Maryland

Graham Tunnel, view from east portal, ca. 1950.

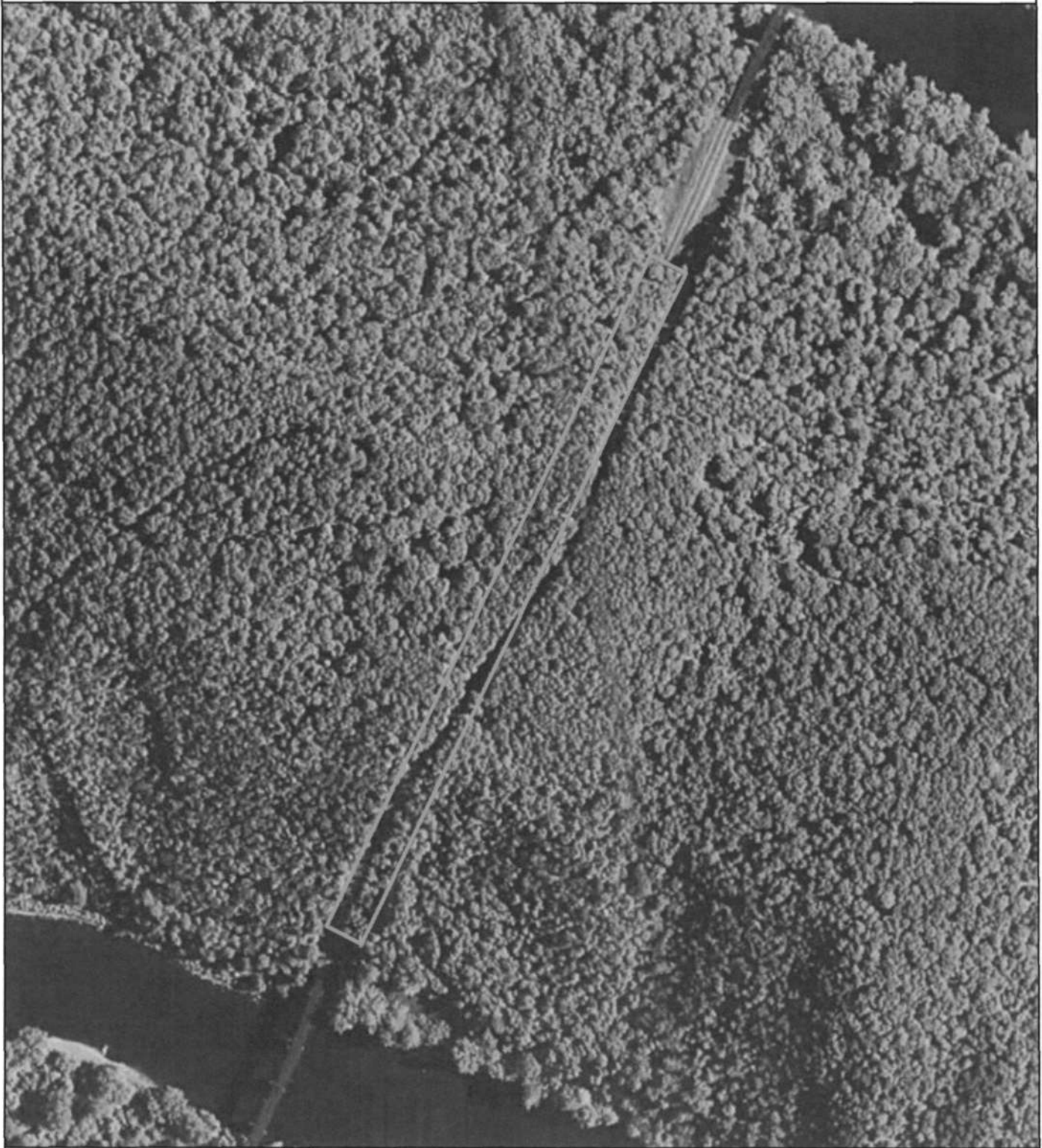
(Source: Source: Baltimore & Ohio Railroad
Historical Society).



Allegany County, Maryland

 Historic Resource

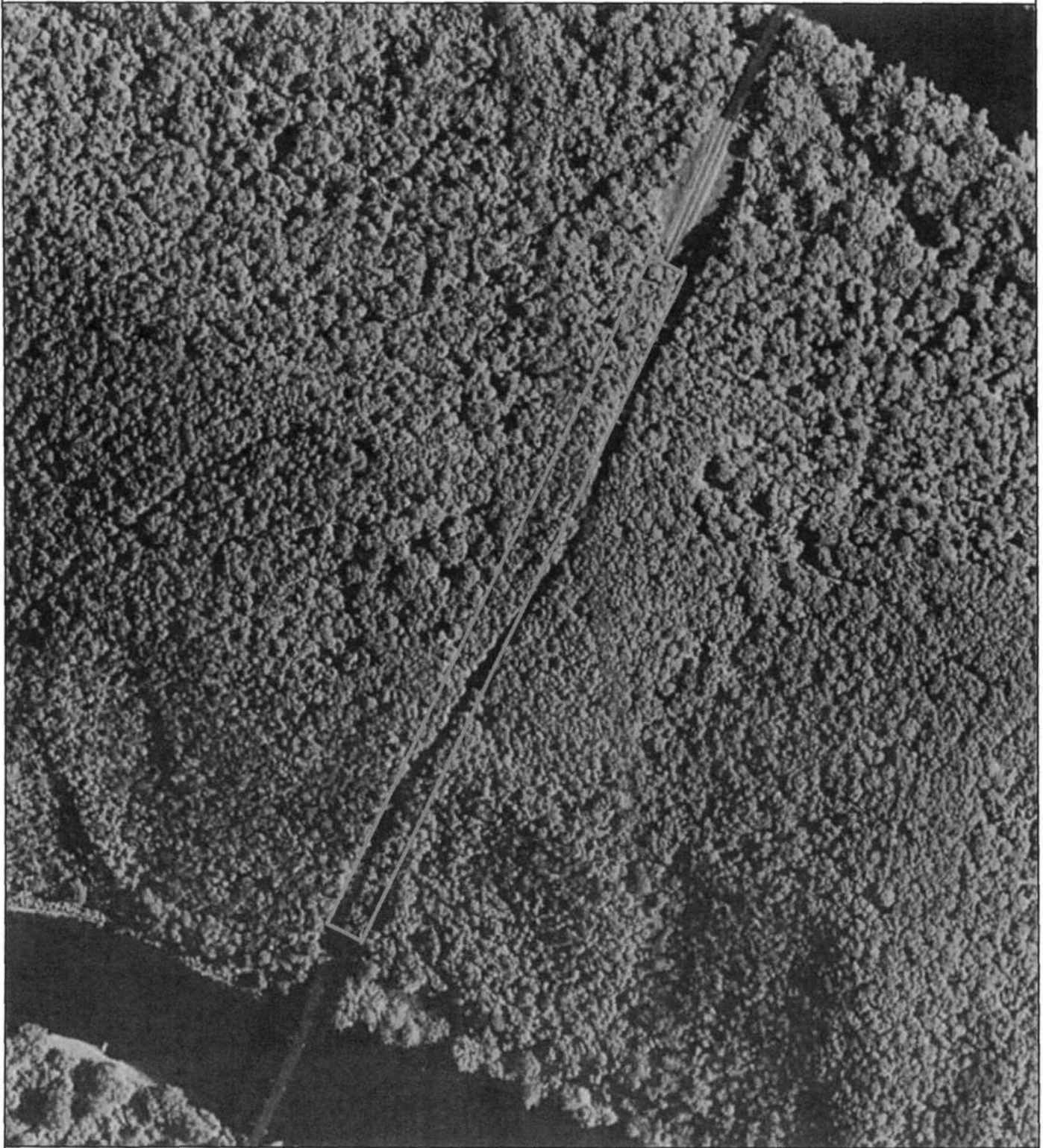
Proposed National Register Boundary
Graham Tunnel
AL-I-C-062
Allegany County, Maryland



300 0 300 Feet

 Proposed National Register Boundary

Proposed National Register Boundary
Graham Tunnel
AL-I-C-062
Allegany County, Maryland



300 0 300 Feet

 Proposed National Register Boundary

Digital Photo Log

MIHP No.: AL-I-C-062

Property Name: Graham Tunnel

County: Allegany County

Photographer: Robert Kreamer

Date: October 4, 2009

Ink and Paper Combination: Epson UltraChrome Pigmented Inks on Epson Enhanced Matte Paper

CD/DVD: Verbatim, UltraLife Gold Archival Grade CD-R

Image File Name	Description of View
AL-I-C-062_2009-10-04_01	Graham Tunnel, east portal. View to southwest. Note double-track on foreground.
AL-I-C-062_2009-10-04_02	Graham Tunnel, east portal. View to southwest.
AL-I-C-062_2009-10-04_03	Graham Tunnel, east portal. View to southwest. Note incised name and date.
AL-I-C-062_2009-10-04_04	Graham Tunnel, east portal. View to southwest. Note eastern portion of portal is built into rock facing.
AL-I-C-062_2009-10-04_05	Graham Tunnel, east portal. View to southeast. Note the use of gunite and brick along the interior tunnel wall.
AL-I-C-062_2009-10-04_06	Graham Tunnel, east portal. View to southwest. Note the fiber optic cable inside tunnel.
AL-I-C-062_2009-10-04_07	Graham Tunnel, east portal. View to southwest. Note the fiber optic conduit running along the base of the west wall.
AL-I-C-062_2009-10-04_08	Graham Tunnel, east portal. View to southwest. Note where brick liner interlocks with the concrete portal.
AL-I-C-062_2009-10-04_09	Graham Tunnel, east portal. View to southwest. Note where brick liner interlocks with the concrete portal.
AL-I-C-062_2009-10-04_10	Graham Tunnel, east portal. View to southwest. Note where brick liner interlocks with the concrete portal.
AL-I-C-062_2009-10-04_11	Graham Tunnel. View to the northeast from the east portal. Note the Magnolia Bridge over the Potomac River in the background.
AL-I-C-062_2009-10-04_12	Graham Tunnel. View to the northeast from outside the east portal. Note the Magnolia Bridge over the Potomac River in the background.
AL-I-C-062_2009-10-04_13	Graham Tunnel. View to southwest looking towards the west portal. Note the use of gunite along the interior walls.
AL-I-C-062_2009-10-04_14	Graham Tunnel. View to west. Note equipment niche.
AL-I-C-062_2009-10-04_15	Graham Tunnel. View to west. Note refuge niche and use of gunite.
AL-I-C-062_2009-10-04_16	Graham Tunnel. View to southwest. Note concrete drain and conduit that run along the east wall.
AL-I-C-062_2009-10-04_17	Graham Tunnel. View to southeast. Note the insulators and electrical wiring along the east wall of the tunnel.
AL-I-C-062_2009-10-04_18	Graham Tunnel, west portal. View to northeast. Note the fiber optic conduit running along niche in the west wall as well as the

	use of gunite.
AL-I-C-062_2009-10-04_19	Graham Tunnel, west portal. View to northeast.
AL-I-C-062_2009-10-04_20	Graham Tunnel, west portal. View to northeast. Note spalling of concrete around the incised date.
AL-I-C-062_2009-10-04_21	Graham Tunnel, west portal. View to northeast. Note the spalling of concrete as well as the intersection of the portal and rock facing.
AL-I-C-062_2009-10-04_22	Graham Tunnel, west portal. View to east. Note the portal is built into the rock facing.
AL-I-C-062_2009-10-04_23	Graham Tunnel, west portal. View to east. Note the spalling of concrete around the portal.
AL-I-C-062_2009-10-04_24	Graham Tunnel, west portal. View to east. Note where brick liner interlocks with the concrete portal.
AL-I-C-062_2009-10-04_25	Graham Tunnel. View to southwest from the west portal. Note the Kessler Bridge over the Potomac River.
AL-I-C-062_2009-10-04_26	Graham Tunnel. View to northeast towards the west portal. Note the Kessler Bridge over the Potomac River.



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL. VIEW TO SOUTHWEST NOTE
DOUBLE TRACK IN FOREGROUND.

PHOTO 1 of 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL.
VIEW TO SOUTHWEST.

PHOTO 2 OF 26



GRAHAM

141

MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL, VIEW TO SOUTHWEST.

NOTE INCISED NAME AND DATE.

PHOTO 3 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY / STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL.

VIEW TO SOUTHWEST. NOTE EASTERN
PORTION OF PORTAL IS BUILT INTO
ROCK FACING.

PHOTO 4 OF 26



213
NINTAS

MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL. VIEW TO
SOUTHEAST. NOTE THE USE OF GUNITE AND BRICK
ALONG THE INTERIOR TUNNEL WALL.

PHOTO 5 OF 26



Fiber

MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE: OCTOBER 4, 2009
OF PHOTO

MD SHPD DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL.
VIEW TO SOUTHWEST, NOTE THE FIBER
OPTIC CABLE INSIDE TUNNEL.

PHOTO 6 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL. VIEW TO
SOUTHWEST. NOTE THE FIBER OPTIC CONDUIT
RUNNING ALONG THE BASE OF THE WEST WALL.

PHOTO 7 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL. VIEW TO
SOUTHWEST. NOTE WHERE BRICK LINER
INTERLOCKS WITH THE CONCRETE PORTAL.

PHOTO 8 OF 26



MIHP#: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPD DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL. VIEW TO
SOUTHWEST. NOTE WHERE BRICK LINER
INTERLOCKS WITH THE CONCRETE PORTAL.

PHOTO 9 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREMMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, EAST PORTAL. VIEW TO SOUTHWEST

NOTE WHERE BRICK LINER INTERLOCKS WITH THE
CONCRETE PORTAL.

PHOTO 10 of 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHAP DESCRIPTION: GRAHAM TUNNEL. VIEW TO THE NORTHEAST FROM THE
EAST PORTAL. NOTE THE MAGNOLIA BRIDGE OVER THE
POTOMAC RIVER IN THE BACKGROUND.

PHOTO 11 OF 26



MIMP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPD DESCRIPTION: GRAHAM TUNNEL. VIEW TO THE NORTHEAST
FROM OUTSIDE THE EAST PORTAL. NOTE
THE MAGNOLIA BRIDGE OVER THE POTOMAC
RIVER IN THE BACKGROUND.

PHOTO 12 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPD DESCRIPTION: GRAHAM TUNNEL. VIEW TO SOUTHWEST
LOOKING TOWARDS THE WEST PORTAL.
NOTE THE USE OF GUNITE ALONG THE
INTERIOR WALLS.

PHOTO 13 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPD DESCRIPTION: GRAHAM TUNNEL. VIEW TO WEST. NOTE
EQUIPMENT NICHE.

PHOTO 14 OF 26

21-2"

MIHP # : AL-I-C-062

NAME : GRAHAM TUNNEL

COUNTY / STATE : ALLEGANY COUNTY, MD

PHOTOGRAPHER : ROBERT KREAMER

DATE of PHOTO : OCTOBER 4, 2009

MD SHPD DESCRIPTION : GRAHAM TUNNEL. VIEW TO WEST. NOTE REFUGE NICHE
AND USE OF GUNITE.

PHOTO 15 of 26



MIHP # : AL-I-C-062

NAME : GRAHAM TUNNEL

COUNTY/STATE : ALLEGANY COUNTY, MD

PHOTOGRAPHER : ROBERT KREAMER

DATE OF PHOTO : OCTOBER 4, 2009

MD SHPO DESCRIPTION : GRAHAM TUNNEL, VIEW TO SOUTHWEST. NOTE CONCRETE
DRAIN AND CONDUIT THAT RUN ALONG THE EAST WALL.

PHOTO 16 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPD DESCRIPTION: GRAHAM TUNNEL. VIEW TO SOUTHEAST. NOTE THE
INSULATORS AND ELECTRICAL WIRING ALONG THE
EAST WALL OF THE TUNNEL.

PHOTO 17 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, WEST PORTAL. VIEW TO NORTHEAST.
NOTE THE FIBER OPTIC CONDUIT RUNNING ALONG NICHE
IN THE WEST WALL AS WELL AS THE USE OF GUNITE.

PHOTO 18 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, WEST PORTAL. VIEW TO NORTHEAST.

PHOTO 19 OF 26

1914

GRAHAM

MIHP # : AL-I-C-062

NAME : GRAHAM TUNNEL

COUNTY/STATE : ALLEGANY COUNTY, MD

PHOTOGRAPHER : ROBERT KREAMER

DATE OF PHOTO : OCTOBER 4, 2009

MD SHPO DESCRIPTION : GRAHAM TUNNEL, WEST PORTAL. VIEW TO
NORTHEAST. NOTE SPALLING OF CONCRETE AROUND
THE INCISED DATE.

PHOTO 20 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY / STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, WEST PORTAL, VIEW TO
NORTHEAST. NOTE THE SPALLING OF CONCRETE AS
WELL AS THE INTERSECTION OF THE PORTAL AND
ROCK FACING.

PHOTO 21 of 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, WEST PORTAL. VIEW TO EAST.

NOTE THE PORTAL IS BUILT INTO THE ROCK FACING.

PHOTO 22 of 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL, WEST PORTAL. VIEW TO EAST.
NOTE THE SPALLING OF CONCRETE AROUND THE
PORTAL.

PHOTO 23 of 26



MHP # : AL-I-C-062

NAME : GRAHAM TUNNEL

COUNTY/STATE : ALLEGANY COUNTY, MD

PHOTOGRAPHER : ROBERT KREAMER

DATE OF PHOTO : OCTOBER 4, 2009

MD SHPO DESCRIPTION : GRAHAM TUNNEL, WEST PORTAL, VIEW TO EAST.

NOTE WHERE BRICK LINER INTERLOCKS WITH
THE CONCRETE PORTAL.

PHOTO 24 OF 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREAMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL. VIEW TO SOUTHWEST FROM
THE WEST PORTAL. NOTE THE KESSLER BRIDGE
OVER THE POTOMAC RIVER.

PHOTO 25 of 26



MIHP #: AL-I-C-062

NAME: GRAHAM TUNNEL

COUNTY/STATE: ALLEGANY COUNTY, MD

PHOTOGRAPHER: ROBERT KREMER

DATE OF PHOTO: OCTOBER 4, 2009

MD SHPO DESCRIPTION: GRAHAM TUNNEL. VIEW TO NORTHEAST TOWARDS
THE WEST PORTAL. NOTE THE KESSLER
BRIDGE OVER THE POTOMAC RIVER.

PHOTO 26 OF 26

AL-I-C-062
Graham Tunnel

The Graham Tunnel was constructed in 1914 during a modernization program of the Baltimore and Ohio Railroad which eliminated miles of track which wound around the many bends of the Potomac River. The only portion of the new double track line located in Maryland was this tunnel. Deck truss bridges in both sides of the tunnel carry the trains into West Virginia. The tunnel is a 2,000 foot vaulted brick arch supported by a cement pedestal ten feet above the tracks. Corbeled cement portals have semicircular openings flanked by massive capped pilasters. A decorative capped "datestone" is at the top of the arched openings.

MARYLAND HISTORICAL TRUST

INVENTORY FORM FOR STATE HISTORIC SITES SURVEY

1 NAME

HISTORIC

Graham Tunnel , Baltimore and Ohio Railroad

AND/OR COMMON

2 LOCATION

STREET & NUMBER

B & O Railway (in Maryland)

Sixth

CITY, TOWN

Paw Paw

X

VICINITY OF

CONGRESSIONAL DISTRICT

STATE

West Virginia

COUNTY
Allegany**3 CLASSIFICATION**

CATEGORY

☐ DISTRICT
☒ BUILDING(S)
☐ STRUCTURE
☐ SITE
☐ OBJECT

OWNERSHIP

☐ PUBLIC
☒ PRIVATE
☐ BOTH
PUBLIC ACQUISITION
☐ IN PROCESS
☐ BEING CONSIDERED

X STATUS

☐ OCCUPIED
☐ UNOCCUPIED
☐ WORK IN PROGRESS
ACCESSIBLE
☐ YES: RESTRICTED
☐ YES: UNRESTRICTED
☒ NO

PRESENT USE

☐ AGRICULTURE
☐ COMMERCIAL
☐ EDUCATIONAL
☐ ENTERTAINMENT
☐ GOVERNMENT
☐ INDUSTRIAL
☐ MILITARY
☐ MUSEUM
☐ PARK
☐ PRIVATE RESIDENCE
☐ RELIGIOUS
☒ SCIENTIFIC
☐ TRANSPORTATION
☐ OTHER

4 OWNER OF PROPERTY

NAME

The Chessie System

Telephone #: 724-3000

STREET & NUMBER

722 Virginia Avenue

CITY, TOWN

Cumberland

VICINITY OF

STATE zip code
Maryland 21502**5 LOCATION OF LEGAL DESCRIPTION**COURTHOUSE,
REGISTRY OF DEEDS, ETC.

Allegany County Courthouse

Liber #:

Folio #:

STREET & NUMBER

30 Washington Street

CITY, TOWN

Cumberland

STATE

Maryland 21502

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

DATE

☐ FEDERAL ☐ STATE ☐ COUNTY ☐ LOCAL
DEPOSITORY FOR
SURVEY RECORDS

CITY, TOWN

STATE

7 DESCRIPTION

AL-I-C-062

CONDITION

☐ EXCELLENT
☐ GOOD
☒ FAIR

☐ DETERIORATED
☐ RUINS
☐ UNEXPOSED

CHECK ONE

☒ UNALTERED
☐ ALTERED

CHECK ONE

☐ ORIGINAL SITE
☐ MOVED DATE _____

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Graham Tunnel is located on the Baltimore and Ohio Railroad two and one-half miles north of Paw Paw, West Virginia.

This tunnel carries two tracks of the railroad through a ridge in Maryland which is bordered on both the north, east, and south by a bend of the Potomac River. On either end of the tunnel is a bridge over the Potomac River leading to West Virginia. The tunnel is approximately 2000 feet in length.

The ceiling of the tunnel is a full length vaulted brick arch which rests on a cement pedestal approximately ten feet above the floor of the tunnel. Corbeled cement portals each have a semicircular arched opening flanked by massive capped pilaster. A decorative capped "datestone" is at the top of each of the arched openings.

CONTINUE ON SEPARATE SHEET IF NECESSARY

PERIOD

AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW

<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input checked="" type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input checked="" type="checkbox"/> THEATER
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input type="checkbox"/> TRANSPORTATION
<input type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES

1914

BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

Graham Tunnel was constructed in 1914 during a modernization program by which the Baltimore and Ohio Railroad eliminated miles of track which traveled around each of the many bends of the Potomac River. The only portion of the new double track line located in Maryland was this tunnel which was dug through a ridge surrounded on the north, east, and south by the River. Deck truss bridges on both sides of the tunnel carry traffic into West Virginia.

The program of straightening the line may have been influenced by the construction of the parallel Western Maryland Railway's Cumberland Extension in 1903-05. (1) The Western Maryland's line avoids, travelling the bends of the river with three tunnels. the Indigo, Stickpile, and Kesler. (2) Within a mile to the west of Graham Tunnel are the Kesler Tunnel and the C & O Canals' Paw Paw Tunnel.

The tunnel is a 2000 foot vaulted brick arch supported by a cement pedestal ten feet above the tracks. Corbeled cement portals have semicircular openings flanked by massive capped pilasters. A decorative capped "datestone" is at the top of the arched openings.

- (1) Edward Killough, ed. History of the Western Maryland Railway Company (Baltimore: Voluntary Relief Department Press, 1938) p.22
- (2) Ibid (See A1-1-C-004, A1 1-C-029 and A1-1-B-030)

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Killough Edward, ed. History of Western Maryland Railway Company (Baltimore Voluntary Relief Department Press, 1938)

CONTINUE ON SEPARATE SHEET IF NECESSARY

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY _____

VERBAL BOUNDARY DESCRIPTION

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE

COUNTY

STATE

COUNTY

11 FORM PREPARED BY

NAME / TITLE David A. Dorsey, Historic Sites Coordinator
Julie Baker, Historic Sites Surveyor

ORGANIZATION Allegany County Historic Sites

DATE
March 4, 1980

STREET & NUMBER 3 Pershing Street

TELEPHONE
777-5944

CITY OR TOWN Cumberland

STATE
Maryland 21502

The Maryland Historic Sites Inventory was officially created by an Act of the Maryland Legislature, to be found in the Annotated Code of Maryland, Article 41, Section 181 KA, 1974 Supplement.

The Survey and Inventory are being prepared for information and record purposes only and do not constitute any infringement of individual property rights.

RETURN TO: Maryland Historical Trust
The Shaw House, 21 State Circle
Annapolis, Maryland 21401
(301) 267-1438

INVENTORY NO: AL-1-C-062

DATE: 2/18/80

REMODELING: Drastic, moderate, minor

NAME OF PROPERTY: GRAHAM TUNNEL - B & O RR.

LOCATION OF PROPERTY: near Magnolia & Paw Paw W. Va

DIRECTION DWELLING FACES: _____

NAME OF OWNER: Chessie System

ADDRESS: _____

STORIES: 1() 2() 3() 4() 5() 6() BAYS: 1() 2() 3() 4() 5() 6() 7() ()

WINGS, ADDITIONS:

DWELLING SHAPE: (square, cross, rectangular) Semicircular opening

WALL CONSTRUCTION:

- () FRAME: Bevel, clapboard, weatherboard, wood shingles, board & batten (type?)
(☒) BRICK: Bond type - common, English, Flemish. Sketch variants.
() STONE: Bond type - rubble, ashlar (random or regular), quoins-plain, rusticated
() LOG
() OTHER: Coverings nailed brick arch rests on cement at 10'
bridges on both ends

WALL FEATURES: Belt Course, Pilasters, Others _____

FOUNDATIONS: High, Low, Brick, Stone

WATER TABLE: None, Plain, Beveled, Moulded Brick

WINDOWS, TRIM, SHUTTERS: 1/1() 2/2() 6/6() 9/6() 9/9() other()
pegged() nailed() wide() narrow() mitred() pediment()

ENTRANCE, DOORS: LOCATION: portals - cement w/ datestone and
HARDWARE: original() replaced() massive pilasters
FAN LIGHT, TRANSOM, SIDE LIGHTS, PLAIN
Paneled, Vertical, Horizontal Boards

CORNICE, BARGE, EAVES: (crown, fascia, soffit, bed)
original() replaced() rafter ends, modillions, dentils, frieze, architrave

ROOF: Gable front, Gable flank, Hip, Shed, Mansard, Gambrel, Flat, Dormers # _____
MATERIAL: wood shingles, slate, tin, asphalt; original() replaced()

PORCHES: SHAPE OF ROOF - shed() hip() gable()

CHIMNEYS: Number: _____ Brick() Stone() Corbeled() original() replaced()
Location: Flush end() Inside end() Outside end() Central() Interior()

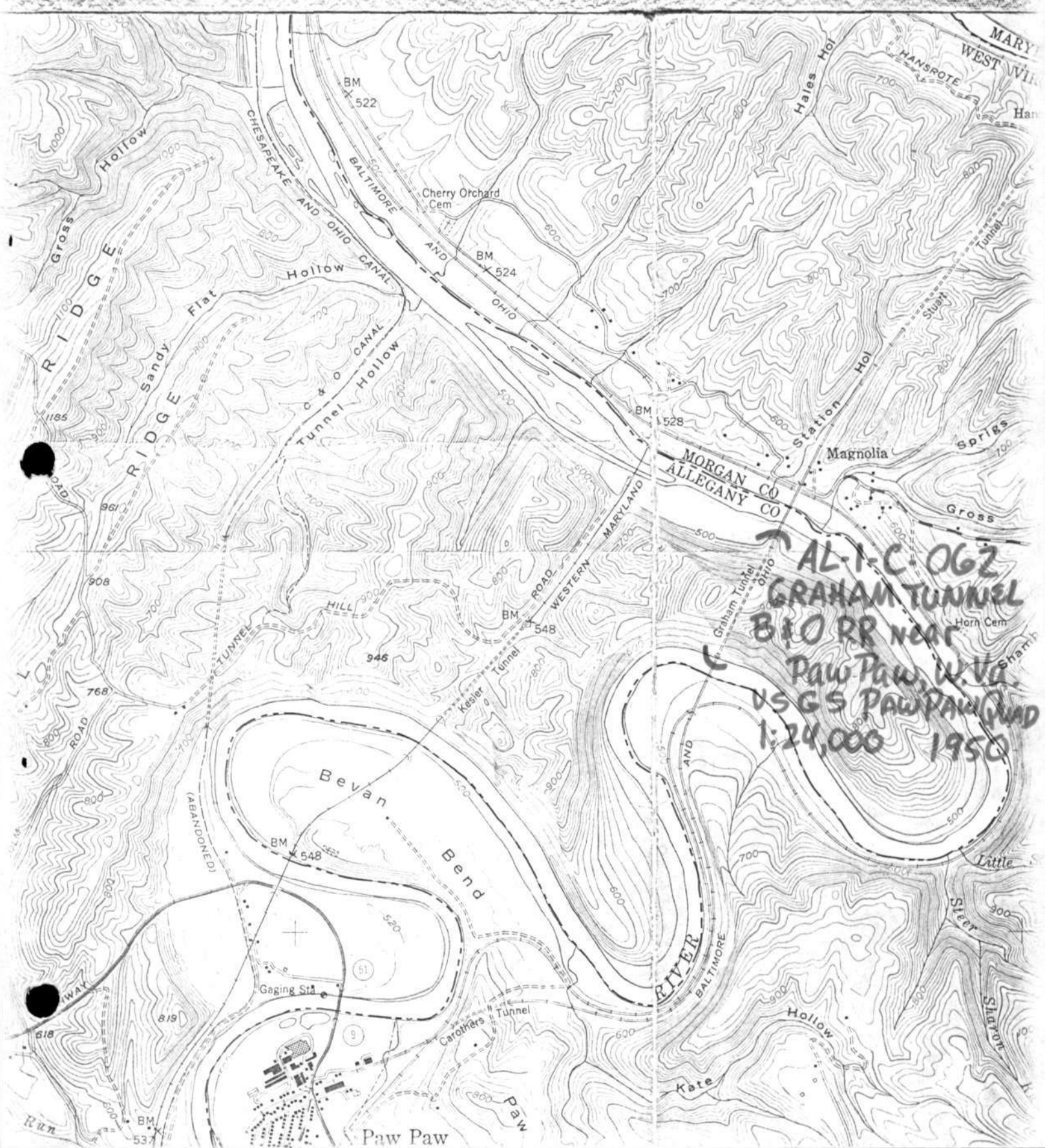
ARCHES: Door & Windows: Keystone, Flat, Segmental, Semicircular

COMMENTS:

USE: _____

SIGNIFICANCE: _____

DATE CONSTRUCTED: _____



AL-1-C-062
GRAHAM TUNNEL
BIO RR NEAR
Paw Paw, W. Va.
USGS PAWPAW QMD
1:24,000 1950



A2-1-C-062

GRAHAM TUNNEL

B&O RR near Paw Paw,
W. Va.

David A. Dorsey

II/10/80

northeast



AL-1-C.062

GRAHAM TUNNEL

B&O RR. near Paw Paw, W. Va.

David A. Dorsey 2/18/80
Southwest